

Course: 102 : Mathematics

Course Code	102
Course Title	Mathematics
Credit	3
Teaching per Week	3 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Review / Revision	June 2014
Purpose of Course	To develop mathematical abilities relevant to Computer Science.
Course Objective	Objective is to provide develop Mathematical Abilities relevant to Computer Science
Pre-requisite	School Mathematics
Course Out come	After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.
Course Content	<p>Unit 1. Set Theory</p> <ol style="list-style-type: none"> 1.1. Introduction 1.2. Representation 1.3. Operation and its properties 1.4. Venn Diagram 1.5. Cartesian product and graph <p>Unit 2. Functions</p> <ol style="list-style-type: none"> 2.1. Definition 2.2. Types – Domain and Range 2.3. Construction and functions <p>Unit 3. Mathematical Logic & Boolean Algebra</p> <ol style="list-style-type: none"> 3.1. Introduction to logic 3.2. Truth Table 3.3. Definition & Examples of Boolean Algebra 3.4. Boolean Functions 3.5. Representation and minimization of Boolean Functions 3.6. Design example using Boolean algebra <p>Unit 4. Matrices and Determinants</p> <ol style="list-style-type: none"> 4.1. Matrices of order $M * N$ 4.2. Row and Column transformation 4.3. Addition, Subtraction and multiplication of Matrices 4.4. Computation of Inverse 4.5. Cramer's Rule 4.6. Business Application of Matrices
Reference Books	<ol style="list-style-type: none"> 1. Co-ordinate Geometry – Shanti Narayan 2. Linear Algebra – Sushoma Verma 3. Advanced Mathematics – B.S. Shah & Co. 4. Schaum's Outline of Boolean algebra and swathing circuits – Elliot Mendelson
Teaching Methodology	Class Work, Discussion, Self Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.